



Course Outline Form

ODD SEMESTER 2019

Dear Student: Course outlines are intended to provide students with an overall plan for a course to enable them to function efficiently and effectively in the course.

*Academic Programs
BSc Biotechnology
EMEA College
Kondotty*

Course Outline : BTY3C02

ENVIRONMENTALBIOTECHNOLOGY (2018-2019)

Name of the Stream	Science
Name of the Programme	BSc Biotechnology
Name of the Course	BTY3C02 ENVIRONMENTALBIOTECHNOLOGY
Nature of the Course	Complementary Course
Semester	Third
Lecturer(s)	Shilly Das.A and Ruba Badrudheen
Name of the Coordinator	
Year	2018-2019
No of Credits	2
No of Contact Hours	2
Course Description	<ul style="list-style-type: none"> The course is an introduction to environmental biotechnology and focuses on the utilization of microbial processes in waste and biodegradation, and bio remediation. Topics included are relevant basic principles in bioremediation and biological water and waste treatment.
Course Objectives	<p>Explains the microbial processes and growth requirements underlying the activated sludge process, nitrification, denitrification, enhanced phosphorus removal, and anaerobic digestion</p> <p>Describe the most commonly applied disinfection methods, and the steps typically involved in drinking water treatment process .</p>
Course Outcome	Evaluate the potential for biodegradation of organic pollutants, taking microbial and physical/chemical environments, as well as the chemical structure of the compound itself, into consideration
Assessment Method	<p>Assignments</p> <p>Class Tests</p> <p>Unit Tests</p> <p>Practical Tests</p> <p>Term Exam</p> <p>Seminars</p>
Teaching Methods Used	
Textbook	Jogdand, G.N and EBT : Basic Concepts and Application: Indushekar Thakur
References	<p>1. Sylvia S. Mader. 2010. BIOLOGY, TENTH EDITION, McGraw-Hill Companies, Inc. 2. T. Srinivas. 2008, New Age International (P) Ltd., Publishers 3. Jogdand, G.N. 1995. EBT, Himalaya Publishing House. 4. EBT : Basic Concepts and Application: Indushekar Thakur (2006). I.K. International Publication. 5. Pelczar, M.J. 1998. Microbiology: Concept & Applications, McGraw.</p>
Internet Resources	

Internal Exam Pattern

Items	Marks/20	Marks/15
Assignment	4	3
Test Paper(s)/Viva voce	8	6
Seminar/Presentation	4	3
Class Room Participation based on Attendance	4	3
Total	20	15

External Exam Pattern

Question Type	No of Question	Marks/Question	Total Marks
Short Questions(2-3 Sentences)	12	2	Ceiling 20
Paragraph / Problem Type	7	5	Ceiling 30
Essay Type	2 out of 4	10	10
Total			60
Time			2 hrs

Graduate Attributes	Name of the Course: BTY3C02 ENVIRONMENTALBIOTECHNOLOGY
	Knowledge
	Academic and Intellectual Skills
	Self Learning
	Collaborative Learning
	Professional Skills
	Communication Skills
	Decision Making
	Problem Solving Skills
	Research Skills
	Entrepreneur Aptitude
	Personal Skills
	Creative Thinking
Lifelong Learning	
Application Skills	
Attitude and Values	
Social Responsibility	
Ethical Commitment	
Global Citizen	

Course Schedule

Solid pollution: Domestic and industrial wastes, ex situ and in situ Processes, heap technique.	Week 1
Composting – principals and applications, landfill	Week 2
vermitechnology ,Assignment	Week 3
Phytore mediation,	Week 4
methanogenesis, biogas, medical solid waste management. unit test	Week 5
Bioremediation: Advantages of bioremediation, types of bioremediation.	Week 6
Monitoring the efficacy of bioremediation. first internal examination	Week 7

Bioventing for controlling oil spills. Bioaugmentation and Biosparging.	Week 8
Degradation of xenobiotic by microorganisms,	Week 9
Degradation of Aromatic and chlorinated Hydrocarbons.	Week 10
Degradation mechanisms of naphthalene, benzene, phenol,	Week 11
Degradation of PCB's, propanil, urea.	Week 12
Biodegradation of petrochemical effluents .second internal examination	Week 13
. Air Pollution: Sources, Health effects of air pollution.	Week 14
Greenhouse effect, acid rain,	Week 15
Control of gaseous emissions, control of pollutants from vehicles,	Week 16
Biomonitoring of air pollution.	Week 17
Removal of air pollutants with biosystems. Biofilter, Biotrickling Filter. modal exam	

Contact Details

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